

WHAT IS CLAIMED IS:

1 1. A method of fabricating an image sensor, comprising:
2 forming a bottom antireflection coating over an exposed surface of an active
3 image sensing device structure;
4 forming a color filter array on the bottom antireflection coating; and
5 substantially removing exposed portions of the bottom antireflection coating.

1 2. The method of claim 1, wherein the bottom antireflection coating
2 comprises a dyed organic film-forming material.

1 3. The method of claim 1, wherein the bottom antireflection coating
2 comprises a light-absorbing polymeric film-forming material.

1 4. The method of claim 1, wherein the bottom antireflection coating has a
2 thickness selected to improve an optical transmission characteristic of one or more
3 colors of the color filter array.

1 5. The method of claim 1, wherein the bottom antireflection coating is
2 substantially transmissive to radiation in a wavelength range of about 400 nm to
3 about 700 nm.

1 6. The method of claim 1, wherein the color filter array comprises a
2 plurality of colored photoresist structures.

1 7. The method of claim 1, wherein exposed portions of the bottom
2 antireflection coating are removed substantially by a plasma etch process.

1 8. The method of claim 7, wherein the plasma etch process is a low-
2 power buffered oxygen ash process.

1 9. The method of claim 7, wherein the plasma etch process removes the
2 bottom antireflection coating at a substantially higher etch rate than the color filter
3 array.

1 10. The method of claim 1, wherein the bottom antireflection coating forms
2 a substantially continuous layer over the exposed surface of the active image sensing
3 device structure before exposed portions of the bottom antireflection coating are
4 substantially removed.

1 11. The method of claim 1, wherein the bottom antireflection coating forms
2 a protective barrier over metal structures at the exposed surface of the active image
3 sensing device structure during formation of the color filter array.

1 12. The method of claim 1, wherein the active image sensor device
2 structure comprises a complementary metal-oxide-semiconductor (CMOS) image
3 sensor.

1 13. An image sensor system, comprising:
2 an active image sensing device structure;
3 a color filter array; and
4 a bottom antireflection coating disposed between the color filter array and a
5 surface of the active image sensing device structure.

1 14. The system of claim 13, wherein the bottom antireflection coating
2 comprises a dyed organic film-forming material.

1 15. The system of claim 13, wherein the bottom antireflection coating
2 comprises a light-absorbing polymeric film-forming material.

1 16. The system of claim 13, wherein the bottom antireflection coating has a
2 thickness selected to improve an optical transmission characteristic of one or more
3 colors of the color filter array.

1 17. The system of claim 13, wherein the bottom antireflection coating is
2 substantially transmissive to radiation in a wavelength range of about 400 nm to
3 about 700 nm.

1 18. The system of claim 13, wherein the color filter array comprises a
2 plurality of colored photoresist structures.

1 19. The system of claim 13, wherein the bottom antireflection coating has a
2 substantially higher plasma etch rate than the color filter array.

1 20. The system of claim 13, wherein the active image sensor device
2 structure comprises a complementary metal-oxide-semiconductor (CMOS) image
3 sensor.

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